

University of Wisconsin – Stevens Point

Department of Physics and Astronomy

University Physics II – PHYS 250

Fall 2020

Course Information

- **Course title:** University Physics II
- **Course number:** PHYS 250
- **Prerequisite:** PHYS240, MATH 226 (Calculus II)
- **Textbook:** *Fundamentals of Physics*, Halliday, Resnick and Walker, 10th edition, Wiley (Available at Text Rental).
- **Instructor:** Maryam Farzaneh
- **Contact:** B105-Science Building, mfarzane@uwsp.edu
- **Office hours:** My office hours will be held on Zoom. If you need to meet with me outside of class times, please email me and we will arrange for individual Zoom meetings.
- **Zoom link (You can join the meeting through Canvas):**
<https://uwsp.zoom.us/j/99679161168?pwd=V0lzL0ZmcEp3ME1tZUQyWVQzeDJHdz09>
Please use this link for all the meetings related to PHYS250 (times are below).
- **Class times**
 - **Group 1 (in-person):** Monday & Thursday 11:00 – 11:50 am (SCI-D101)
 - **Group 2 (in-person):** Wednesday & Friday 11:00 – 11:50 am (SCI-D101)
 - **Both Groups and Online-only students:** Monday 3:00- 4:00 pm (Lab, on Zoom)
 - **Online-only students:** Wednesday 3:00- 4:00 pm (on Zoom)

Course Description

Physics 250 covers foundational topics in electricity, magnetism, waves, and optics and continues to introduce you to the mathematical representation of the physical world. This theoretical work will be supplemented by experiments that introduce you to contemporary laboratory instruments and measurement techniques, as well as the mathematical methods of data analysis.

Learning Objectives

By taking this course you should expect the following:

1. You should be able to explain the major conceptual ideas in physics and apply them to the solution of scientific problems.
2. You should be able to apply mathematical methods to the solution of physics problems.
3. You should be able to analyze an experiment and be able to construct a mathematical model to explain the results you obtain from that experiment.

Required Material

- **Calculator:** Please have a scientific calculator handy.

Lectures

Lectures are in video format. They are no longer than 30 minutes. Each week a module, consisting of no more than 5 to 6 videos will be posted on Canvas. **Please watch these videos before coming to class.**

- **In-person Classes (Lecture Review, Discussion and Conceptual Exercises)**

The class will be divided into two groups and I meet with each group twice a week in D-101. **We will follow the rules of social distancing and will wear face masks, as required by the university policy (please see the General Course Policies section below).** Group 1 will meet Monday and Thursday (11:00 – 11:50 am) and Group 2 will meet Wednesday and Friday (11:00 – 11:50 am) in D101.

At the beginning of each class, I will briefly review the relevant topics discussed in lectures and answer any questions. You will then start working on a discussion worksheet which includes both conceptual exercises and numerical problems. If you have time, you can also start working on your homework assignment for the week. My role will be to answer any questions and provide any help and guidance you need.

I strongly encourage you to come to class and take advantage of the interaction with your peers and the help I provide. You might even get a head start on your homework assignments during these classes.

- **Online-only Classes**

For those of you who choose to take the course online, I will be available on Zoom on Wednesdays, 3:00- 4:00 pm. I will go through any difficult points in lectures and answer your questions. All the worksheets and homework assignments are available on Canvas. You can work on these during our meetings and ask me any questions you have. If you need to meet with me outside of this time, please email me and we can arrange another Zoom meeting.

Homework

You will have one homework assignment per week. These will be posted on Canvas along with your video lectures. You may start working on these during our class time, after your worksheets are done (see above item). You typically have one week to finish your homework and submit it on Canvas. Your

homework grade is based on the completion of the assignment and the score from a few (typically four) randomly graded problems. I will post the solutions to the entire homework assignment on Canvas right after the date the assignment is due.

Laboratory

The labs this semester are fully online and virtual. Every week, you will watch an assigned interactive video of an experiment on a website called Pivot Interactives (linked through Canvas). As you watch, you will be able to take data and enter it in a data table. You will then analyze the data and answer some questions. Each lab assignment is due on the day indicated on the assignment. **Please refer to the Pivot instruction document for further information.** I will be available on Zoom on Mondays from 3:00 to 4:00 pm to further explain the lab and answer any questions you might have from the labs. *Homework and Laboratory assignments together count for 50% of your overall grade.*

Exams

There will be *two* midterm exams during the semester, not counting your final exam. These exams will be held **on weeks 5 and 11 (please see the course schedule) and are take-home exams.** I will give you 24 hours to finish each exam and submit it on Canvas. The final exam is non-cumulative and is scheduled for **Tuesday, December 15, 10:15 am.** *Overall, these three exams count for 50% of your grade.*

General Course Policies

- **Face Coverings:**

At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the Disability and Assistive Technology Center (see below) to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.

- **Other COVID-19 Related Guidance:**

- Please monitor your own health each day using this [screening tool](#). If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
- As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.

- **Disability services**

UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and temporary impairments. If you have a disability or acquire a condition during the semester where you need assistance, please contact the Disability and Assistive Technology Center on the 6th floor of Albertson Hall (library) as soon as possible. DATC can be reached at 715-346-3365 or DATC@uwsp.edu.

- **Academic misconduct**

I expect you to be familiar with the UWSP policies regarding student conduct. You can find the relevant documents here: <https://www.uwsp.edu/dos/Pages/Student-Conduct.aspx>. Simply put, *do not* copy each other's homework, lab reports and exams and pass them off as your own. Any confirmed incidence of academic misconduct, including plagiarism and other forms of cheating will be treated seriously and in accordance with University policy.

- The schedule for the final exam is set by the University. I will not schedule an early final exam for whatever reason.
- **I do not assign work for extra credit. There are *no* bonus points that you can earn.**
- Once you hand in your final exam, there is nothing more you can do to change your grade.

Grading and Evaluation

I will calculate your grade based on a weighted percentage of your scores as follows:

Homework and Laboratory	50%
Exams (2 midterms, 1 Final Exam)	50%

Your overall letter grades will be determined as follows:

93% and above	A	87--89%	B+	77--79%	C+	67--69%	D+
90--92%	A-	83--86%	B	73--76%	C	60--66%	D
		80--82%	B-	70--72%	C-	below 60%	F

Please note that I do *not* grade on a curve. Grades will be rounded up. For example, 86.6% will become an 87% (B+), but 86.3% will remain a B.

Tentative Course and Lab Schedule

The tentative course schedule is as follows. This might change, and I will try my best to announce any changes beforehand.

Week	Chapter and Topic	Lab
(1)	(21) Introduction, Electric charge, electrostatic force	No Lab
(2)	(22) Electric Field	Lab1
(3)	(23) Gauss' Law, symmetry, surface integrals	Lab 2
(4)	(24) Electric potential, work done, line integral	Lab 3
(5)	(25) Capacitors	Exam 1 (no lab)
(6)	(26) Electrical conduction and current	Lab4
(7)	(27) DC circuits	Lab 5
(8)	(28,29) Magnetic field and forces	Lab 6
(9)	(30) Electromagnetic Induction	Lab 7
(10)	(31) AC circuits	Lab 8
(11)	(16, 33) Waves, Electromagnetic waves	Exam 2 (no lab)
(12)	(33) Reflection and refraction, polarization	Lab 9
(13)	(34) Image formation by lenses	Lab 10
(14)	(35, 36) Interference, Diffraction	Lab 11
(15)	Review, Q&A	No Lab
(16)	Final Exam: Tuesday, December 15, 10:15 am	